

COMMON HALF YEARLY EXAMINATION - 2018

Standard XII

Reg.No. :

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Time: 2.30 hours.

BIOLOGY

Marks: 70

Instructions: 1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

2) Use Blue or Black ink to write and underline and pencil to draw diagrams.

Part - I (Bio-Botany)

(Marks : 35)

Section - I

Note : i) Answer all the questions.

8 x 1 = 8

ii) Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer.

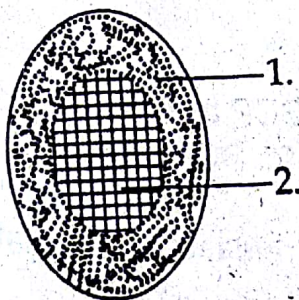
- "The bird of paradise flower" refers to
 - Musa paradisiaca
 - Sterlitzia reginae
 - Ravenala madagascariensis
 - Heliconia sp.
- Lateral roots originate from _____
 - Endodermis
 - Epidermis
 - Pericycle
 - Cortex
- Haploid set of chromosome in Ophioglossum is _____
 - 631
 - 24
 - 40
 - 5
- Powdered seeds of _____ are used instead of Coffee.
 - Panax ginseng
 - Ilex paraguriensis
 - Papaver somniferum
 - Cola nitida
- The enzyme DNA ligase was discovered in the year _____
 - 1942
 - 1966
 - 1950
 - 1970
- Genomes of two incompatible plants A and B can be hybridised through
 - plant tissue culture
 - protoplasmic fusion
 - gene cloning
 - bio remediation
- The sugar present in ATP has
 - 5 carbon atom
 - 6 carbon atom
 - 4 carbon atom
 - 7 carbon atom
- The stipules are modified into a pair of spines in _____
 - euphorbia tirucalli
 - euphorbia pulcherrima
 - euphorbia antiquorum
 - euphorbia splendens

Section - II

Answer any 4 questions:

4 x 2 = 8

- Write the systematic position of Solanaceae.
- What are dimorphic chloroplasts?
- Identify the given Vascular bundle and label the parts.



12. Define Photoperiodism.
13. Write the composition of Bordeaux mixture.
14. Losses during storage and transport of tomatoes can be as high as 80%, which is mainly due to biological activities? How can we prevent it?

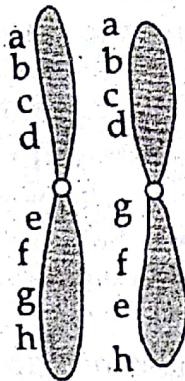
Section - III

Answer any 3 questions:

3 x 3 = 9

(Ques.No.18 is compulsory)

15. Mention the importance of Herbarium.
16. Describe the different types of Parenchyma tissue.
17. Mention the type of chromosomal aberration in the diagram. Write a note on it.



18. Complete the following table showing details of ATP production in Aerobic respiration.

SNo	Stages of Respiration	Number of molecules of			Total number of ATP obtained
		ATP	NADH ₂	FADH ₂	
1.	Glycolysis	?	?	-	?
2.	Oxidative decarboxylation of pyruvic acid	-	2	-	6
3.	Krebs cycle	?	?	?	?
	Total	?	?	?	?

19. Bring out the economic importance of Teak.

Section - IV

Give the answer for the following questions:

2 x 5 = 10

20. Describe Hibiscus rosasinensis in technical terms.

(or)

Describe the Phloem tissues.

21. a) What is SCP?
- b) Why people hesitate to use SCP as major food? List out any 4 points?
- c) Mention the organisms used for SCP production and mention any two uses of SCP.

(or)

What happens to the electrons released on excitation of PSI only? Explain with flow chart and mention the type of photophorylation.

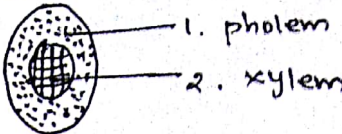
Part - I

1. b) Sterilitzia reginae
2. c) pericycle
3. a) 631
4. d) cola nitida
5. b) 1966
6. b) protoplasmic fusion
7. a) 5 carbon atom
8. d) Euphorbia splendens

SECTION-II

- 9.
- class : Dicotyledonae
Sub-class : Gamopetalae
Series : Bicarpellatae
Order : Polemoniales
Family : Solanaceae

10. The C_4 plants contain dimorphic chloroplasts i.e. chloroplast in mesophyll cells are granal whereas in bundle sheath chloroplasts are agranal. The presence of two types of cells leads to segregation of photosynthetic work i.e. light reactions and dark reactions separately.

11. Amphicribal vascular bundle
- 
1. phloem
2. xylem

12. The response of a plant to the relative lengths of light and dark period is known as photoperiodism.

13.	Copper sulphate	9kgs.
	Quick lime	9kgs.
	Water	250 litres.

14. In tomato the enzyme polygalacturonase breaks down cell wall constituents, thus leading to softening of the fruit during ripening. By inhibiting the polygalacturonase by antisense organs the tomato can remain dormant fresh until mature and be transported in a firm solid state. Antisense RNA is a RNA molecule capable of controlling in a firm expression of particular enzyme which are involved in ripening process.

SECTION-iii

15. page no. 6 (Any two points)

(b. i) aerenchyma

In water plants, the parenchyma found in the cortex region possesses well-developed large intercellular spaces called air spaces. The air filled parenchyma tissue is aerenchyma.

(ii) The parenchyma cells that are stored with starch grains are called storage parenchyma.

iii) In the petioles, banana and canna, star shaped parenchyma cells are found. The cells are stellate parenchyma.

iv) In green parts of plants, the parenchymatous cells have chloroplasts. These cells are chlorenchyma.

17. Inversion:

It is another chromosomal abnormality in which, the order of genes in a chromosomal segment is reversed by an angle of 180° . For eg. the order of genes in a chromosomal is a, b, c, d, e, f, g and h. Due to aberration, the sequence of genes becomes a, b, c, d, g, f, e and h. There are two types - pericentric and paracentric inversion.

18.

	ATP	NAPH ₂	FADH ₂	Total ATP
1. Glycolysis	2	2	-	8
2. oxidative decarboxylation	-	2	-	6
3. Krebs cycle	2	6	2	24
Total	4	30	4	38

19. page no - 168 (Any three points).

SECTION - IV

20. a) page no : 14

b) page no : 40

21. a) page no : 100-101

b) page no : 108

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